



NOTE
PIPING SHOWN IS TYPICAL, NOT
NECESSARILY TO TRAINER INVENTORY.

LM-2500 ENGINE BASE PENETRATION ASSY MOCKUP, DEVICE 19E21

TRAINING CATEGORY:

PROPULSION ENGINEERING (Damage Equipment Maintenance)

ORIGINATING AGENCY:

CNET

SECURITY CLASSIFICATION:

Device 19E21 is unclassified.

INTENDED USE:

For classroom use, in support of the DD963 maintenance training course for the LM-2500 gas turbine module. Formal instructions on plumbing assembly and disassembly techniques, and limited test and calibration procedures, are demonstrated by the instructor using this device, and students may obtain individual experience by practice.

FUNCTIONAL DESCRIPTION:

Device 19E21 consists of a tubular steel, casted dolly with a gear-driven rotatable upper framework supporting a production gearbox

with accessories attached, and the lower half of the forward compressor stator case of the propulsion gas turbine. A test set (PN 1C6805) is provided for transducer test and calibration.

Casters on the dolly are equipped with swivel locks for selective steer-ability and with wheel locks for parking security.

Trunnion bearings atop the base dolly pylons receive the journals of the gearbox/stator case support frame. A double-reduction gear-drive, providing a 282:1 drive ratio, retains the frame in any given position. This allows the instructor to demonstrate the underside of the base plate to show the accessories to which the piping is connected, and the transducers for calibration or testing.

Production LM-2500 gas turbine transfer gearbox supports and adaptors are used to mount the gearbox to the frame and to the stator casing. Special brackets are used as necessary to attach the gas turbine components and accessories to the trainer upper frame.

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The floorplate, inside the rectangular upper frame, is positioned to simulate the proximity of the gas turbine module floor structure so that access to the connecting piping may accurately be demonstrated.

Piping, like that on the production LM-2500 propulsion gas turbine module, is connected to the appropriate fittings on the gearbox and accessories, and to their respective connections on the base penetration plate of the trainer. Under-floor transducers are placed in module relationship and are accessible for demonstrations of calibration and testing.

No fluids, air pressure or electricity are carried in any of the trainer conduits. All of the piping is actual LM-2500 gas turbine plumbing or duplications which are identical in appearance and application. Each line is removable by disconnecting the end fittings and any support brackets or clamping involved.

A test set (PN 1C6805), containing an absolute pressure gage, differential pressure gauges, pressure regulator, multimeter and a portable vacuum pump, is provided with the trainer.

PHYSICAL INFORMATION:

Device 19E21 is a self-sustaining trainer, requiring only standard 120 volts wall plug power to operate the vacuum pump for transducer test and calibration.

a. The base assembly of the trainer is of tubular steel, measuring 88" x 66". Adding an overhung pylon bearing support and the support for the gear-reduction drives, increases the longer dimension to approximately 111". Height of the base dolly to the centerline of the trunnion bearings is approximately 50". Overall height of the dolly and gearbox support frame approximates 76", and including the compressor stator section gives a total height of 92".

b. Two (2) rods with attaching pins are provided to secure the upper frame in a horizontal position for transporting the trainer or for locking the frame horizontally for trainer activities.

c. A lift eye on each of four (4) corners of the upper gearbox frame is for hoisting the upper frame to the base dolly for installation purposes only.

CAUTION: Do not attempt to lift the entire trainer, using the four (4) lift eyes as hoisting purchase. The lift eyes are for trainer assembly only.

d. The gearbox and accessory items used on the trainer are not necessarily operational components. Most have internal parts omitted to reduce weight of the trainer; but appearance of the parts are not altered, nor is function compromised.

e. A fitted cover of oil and moisture resistant fabric is provided for the trainer when not in use. Snap fasteners secure the cover to the floor plate of the upper frame.

f. Total weight of the base penetration trainer, complete with cover, approximates 3,000 lbs.

POWER REQUIREMENTS:

120 VAC for Vacuum Pump

PUBLICATIONS FURNISHED:

Summary, NAVTRADEV P-3998 (U)

REFERENCE PUBLICATIONS (NOT SUPPLIED):

Maintenance Manual - GEK 35612

PERSONNEL:

Instructor: One (1), Gas Turbine Maintenance Qualified

Students: Class of Six (6), Maximum

Maintenance: Maintenance is nominal, consisting of periodic cleaning.

CONTRACT IDENTIFICATION:

Manufactured by General Electric Company, New Orleans, LA under NAVTRASYSNEN Contract No. N61339-73-C-0177.

LOCAL STOCK NUMBER:

6910-LL-C00-3255